

WHAT IS CLAIMED IS:

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1. An encapsulated document structure  
comprising:

a document information file storing document  
information that is a substance of expression of a  
10 document; and

an operating program file storing an operating  
program that materializes the document information, a  
limitation being given to the operating program by a  
security function when the operating program is  
15 interpreted and executed by a computer,

wherein the document information file and the  
operating program file are encapsulated as a single  
document.

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2. The encapsulated document structure as  
claimed in claim 1, wherein the security function of  
25 said operating program file is controlled based on

specific decryption key information for decrypting encrypted digital information.

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3. The encapsulated document structure as claimed in claim 2, further comprising encapsulating means for encapsulating said decryption key information, said operating program file and said document information file into a single document.

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4. The encapsulated document structure as claimed in claim 3, wherein encapsulating means encapsulates said decryption information, said operating program file and said document information file into a single file.

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5. The encapsulated document structure as

claimed in claim 3, wherein said decryption key  
information is signed and encrypted by a third party  
authority.

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6. The encapsulated document structure as  
claimed in claim 3, wherein said operating program is  
10 started by an external start program that is interpreted  
and executed by said computer.

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7. The encapsulated document structure as  
claimed in claim 6, wherein said operating program file  
is described by an intermediate language code, and runs  
by interpreting and executing the intermediate language  
20 code.

25

8. The encapsulated document structure as

claimed in claim 6, wherein said operating program is  
decrypted and started by said start program in  
accordance with said decryption key information.

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9. The encapsulated document structure as  
claimed in claim 6, wherein said operating program  
10 started by said start program operates within  
predetermined operation rights.

15

10. The encapsulated document structure as  
claimed in claim 3, wherein said decryption key  
information includes link information of URL.

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11. The encapsulated document structure as  
claimed in claim 3, wherein a storage area of said  
25 operating program is described therein.

5                   12. The encapsulated document structure as  
claimed in claim 3, further comprising a start program  
file storing a start program that is interpreted and  
executed by said computer to start said encapsulated  
document file, wherein, when a file identifier of said  
10 encapsulated document file is changed, said operating  
program file is started by said start program.

15

                  13. The encapsulated document structure as  
claimed in claim 12, further comprising signature  
determining means for determining whether the signature  
information in said encapsulated document is true or  
20 false, wherein, when said signature information is false,  
an unfair act process for performing a predetermined  
operation to avoid a problem caused by an unfair act  
performed with respect to the encapsulated document.

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14. The encapsulated document structure as  
claimed in claim 12, wherein said start program displays  
5 the signature information of said operating program to  
be started or said encapsulated document so as to cause  
a user to check the start.

10

15. The encapsulated document structure as  
claimed in claim 14, wherein said start program file  
includes signature retaining means for retaining  
15 signature information, and said start program compare  
the signature information retained by said signature  
retaining means with the signature information in said  
encapsulated document so as to eliminate a signature  
display to the user when the signature information  
20 retained by said signature retaining means matches the  
signature information in said encapsulated document.

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16. The encapsulated document structure as  
claimed in claim 3, further comprising: a start program  
file storing a start program that is interpreted and  
executed by said computer; and an installation program  
5 file storing an installation program that installs said  
start program in said computer when a file identifier of  
said encapsulated document file is changed.

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17. The encapsulated document structure as  
claimed in claim 16, further comprising signature  
determining means for determining whether the signature  
15 information in said encapsulated document is true or  
false, wherein, when said signature information is false,  
an unfair act process for performing a predetermined  
operation to avoid a problem caused by an unfair act  
performed with respect to the encapsulated document.

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18. The encapsulated document structure as  
25 claimed in claim 16, wherein said start program displays

the signature information of said operating program to be started or said encapsulated document so as to cause a user to check the start.

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19. The encapsulated document structure as claimed in claim 18, wherein said start program file  
10 includes signature retaining means for retaining signature information, and said start program compare the signature information retained by said signature retaining means with the signature information in said encapsulated document so as to eliminate a signature  
15 display to the user when the signature information retained by said signature retaining means matches the signature information in said encapsulated document.

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20. The encapsulated document structure as claimed in claim 1, further comprising encapsulating means for encapsulating said document information file  
25 and said operating program file into a single file,



wherein said operating program is started by an external start program and is limited in operation rights thereof.

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21. The encapsulated document structure as claimed in claim 20, wherein said single file is signed and encrypted.

10

22. The encapsulated document structure as claimed in claim 20, wherein said operating program is limited in operation rights thereof based on signature information regarding said operating program.

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23. The encapsulated document structure as claimed in claim 20, wherein an input and output of said operating program started by said start program is performed through an input and output library provided

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in said operating program.

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24. The encapsulated document structure as claimed in claim 21, wherein said encapsulated document includes signature information, and said operating program starts said operating program in accordance with the signature information.

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25. The encapsulated document structure as claimed in claim 1, wherein said contents information file includes:

at least one contents file that serves as a substance of expression on a document; and

20

a document structure file specifying a structure of the contents file and a display status on said document.

25

26. The encapsulated document structure as claimed in claim 6, further comprising an icon file regarding an icon displayed on a display of said  
5 computer in accordance with substantive data of said document, wherein a selective designation of said icon is determined as an accessing operation to said document by said computer.

10

27. The encapsulated document structure as claimed in claim 25, further comprising a library file  
15 storing said contents file with an index indicating a storing location thereof, wherein said operating program file specifies said contents file according to said index.

20

28. The encapsulated document structure as claimed in claim 25, further comprising a library file  
25 storing said contents file provided with a specific

header, wherein said operating program file specifies  
said contents file according to said header.

5

29. The encapsulated document structure as  
claimed in claim 25, wherein said document contents file  
is described by a general-purpose data description  
10 language.

15 30. The encapsulated document structure as  
claimed in claim 29, wherein said data description  
language uses a tag to describe a structure of said  
contents file and an element specifying the display  
status on said document.

20

31. The encapsulated document structure as  
25 claimed in claim 30, wherein said operating program file

is provided in accordance with a file format specified  
by said contents file described using said tag.

5

32. The encapsulated document structure as  
claimed in claim 25, wherein said operating program file  
is provided with a part as minimum unit necessary for  
10 processing said contents file.

15 33. The encapsulated document structure as  
claimed in claim 25, further comprising:

a file of a digital information display  
program for causing said contents file accessible on a  
display of said computer; and

20 a file of a functional operation program for  
performing a specific function without referring to  
digital information of said contents file.

25

34. The encapsulated document structure as claimed in claim 33, wherein said digital information display program has a function to display a file specifying panel for displaying file specifying information that specifies said contents file in a selectable state, and a function to causing said contents file, which corresponds to a case where said file specifying information is selected, accessible on said display of said computer.

35. The encapsulated document structure as claimed in claim 33, wherein said functional operation program has a function to display a function panel for function specifying information that specifies a predetermined function in a selectable state, and a function to perform said predetermined function that corresponds to a case where said function specifying information is selected.

36. The encapsulated document structure as  
claimed in claim 33, wherein said digital information  
display program has a scaling function to enlarge or  
5 reduce a displayed image based on said contents file.

10 37. The encapsulated document structure as  
claimed in claim 33, wherein said digital information  
display program has a view changing function to change a  
viewpoint when a displayed image based on said contents  
file is a three-dimensional image.

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38. The encapsulated document structure as  
20 claimed in claim 33, wherein said digital information  
display program has a function, when a displayed image  
based on said contents file is a dynamic image, to  
display a static image extracted from the dynamic in  
said document in a selectable state, and a function to  
25 reproduce the dynamic image when the static image is

selected.

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39. The encapsulated document structure as claimed in claim 33, wherein said digital information display program has a function to display, when said contents file includes audio information, a reproduction  
10 panel for causing the audio information designatable, and a function to reproduce the audio information when a reproduction of said audio information is designated through said reproduction panel.

15

40. The encapsulated document structure as claimed in claim 39, wherein said digital information  
20 display program has a function to display, when a reproduction of said audio information is designated through said reproduction panel, text information corresponding to said audio information.

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41. The encapsulated document structure as  
claimed in claim 1, further comprising a feature amount  
5 retaining file retaining an encrypted feature amount  
regarding said program file, the feature amount  
retaining file being encapsulated into said single file.

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42. The encapsulated document structure as  
claimed in claim 41, wherein said feature amount  
retaining file also retains an encrypted feature amount  
15 regarding said document information file.

20 43. The encapsulated document structure as  
claimed in claim 41, wherein said feature amount  
retaining file retains decryption key information used  
for decrypting the encrypted feature amount regarding  
said operating program file.

25

44. The encapsulated document structure as  
5 claimed in claim 41, wherein said feature amount  
retaining file retains location information which  
indicates decryption key information used for decrypting  
the encrypted feature amount regarding said operating  
program file.

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45. The encapsulated document structure as  
15 claimed in claim 43, wherein a different set of said  
decryption key information is related to each operating  
program file.

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46. The encapsulated document structure as  
claimed in claim 44, wherein a different set of said  
decryption key information is related to each operating  
25 program file.

5                   47. The encapsulated document structure as  
claimed in claim 41, wherein the feature amount  
regarding said operating program file is encrypted by a  
public key encryption method.

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                  48. The encapsulated document structure as  
claimed in claim 43, wherein said decryption key  
15 information is signed and encrypted by a third party  
authentication authority.

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                  49. The encapsulated document structure as  
claimed in claim 41, wherein the feature amount  
regarding said operating program file is encrypted by a  
private key encryption method.

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50. The encapsulated document structure as  
5 claimed in claim 41, further comprising a feature amount  
verification program for performing a verification of a  
tamper on said operating program file, the feature  
amount verification program being encapsulated into said  
single file.

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51. The encapsulated document structure as  
15 claimed in claim 1, wherein a feature amount of the  
operating program in said operating program file is  
stored outside said single document.

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52. The encapsulated document structure as  
claimed in claim 51, wherein the feature amount  
regarding said operating program file is encrypted by a  
25 public key encryption method.

5                   53. The encapsulated document structure as  
claimed in claim 51 wherein the feature amount regarding  
said operating program file is encrypted by a private  
key encryption system.

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                  54. The encapsulated document structure as  
claimed in claim 51, further comprising a feature amount  
15 verification program for performing a verification of a  
tamper on said operating program file, the feature  
amount verification program being encapsulated into said  
single file.

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                  55. An encapsulated document structure  
comprising:  
25                   a document information file storing contents

information that is a substance of expression on a document;

location information indicating a location where an operating program file is stored, the operating  
5 program file storing an operating program for materializing the document information file; and

a feature amount retaining file retaining an encrypted feature amount regarding said operating program file,

10 wherein said document information file, said location information and said feature amount retaining file are encapsulated into a single file.

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56. The encapsulated document structure as claimed in claim 55, wherein said feature amount retaining file also retains an encrypted feature amount  
20 regarding said document information file.

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57. The encapsulated document structure as

claimed in claim 55, wherein said feature amount retaining file retains decryption key information used for decrypting the encrypted feature amount regarding said operating program file.

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58. The encapsulated document structure as claimed in claim 55, wherein said feature amount retaining file retains location information which indicates decryption key information used for decrypting the encrypted feature amount regarding said operating program file.

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59. The encapsulated document structure as claimed in claim 57, wherein a different set of said decryption key information is related to each operating program file.

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60. The encapsulated document structure as  
claimed in claim 58, wherein a different set of said  
decryption key information is related to each operating  
5 program file.

10 61. The encapsulated document structure as  
claimed in claim 55, wherein the feature amount  
regarding said operating program file is encrypted by a  
public key encryption method.

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62. The encapsulated document structure as  
claimed in claim 57, wherein said decryption key  
20 information is signed and encrypted by a third party  
authentication authority.

25



63. The encapsulated document structure as claimed in claim 55, wherein the feature amount regarding said operating program file is encrypted by a private key encryption system.

5

64. The encapsulated document structure as claimed in claim 55, further comprising a feature amount verification program for performing a verification of a tamper on said operating program file, the feature amount verification program being encapsulated into said single file.

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65. An encapsulated document structure comprising:

document information file storing contents information that is a substance of expression on a document; and

location information indicating a location where an operating program file containing an operating

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program for materializing the document information file  
is stored,

wherein the document information file and the  
location information are encapsulated into a single file,  
5 and a feature amount regarding the operating program  
file is stored outside said single file.

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66. The encapsulated document structure as  
claimed in claim 65, wherein the feature amount  
regarding said operating program file is encrypted by a  
public key encryption method.

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67. The encapsulated document structure as  
20 claimed in claim 66, wherein decryption key information  
used for decrypting the encrypted said operating program  
file is signed and encrypted by a third party  
authentication authority.

25

68. The encapsulated document structure as claimed in claim 65, wherein the feature amount  
5 regarding said operating program file is encrypted by a private key encryption system.

10

69. The encapsulated document structure as claimed in claim 65, further comprising a feature amount verification program for performing a verification of a tamper on said operating program file, the feature  
15 amount verification program being encapsulated into said single file.

20

70. A document file producing apparatus producing an electronic document file having an encapsulated document structure, said encapsulated document structure comprising:

25 a document information file storing document

information that is a substance of expression of a document; and

an operating program file storing an operating program that materializes the document information, a  
5 limitation being given to the operating program by a security function when the operating program is interpreted and executed by a computer,

wherein the document information file and the operating program file are encapsulated as a single  
10 document.

15 71. The document file producing apparatus as claimed in claim 70, wherein said operating program file is produced and distributed by an operating program provider beforehand.

20

72. The document file producing apparatus as claimed in claim 70, wherein the security function of  
25 said operating program file is controlled based on

specific decryption key information for decrypting encrypted digital information.

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73. The document file producing apparatus as claimed in claim 72, wherein said specific decryption key information is produced and distributed by an operating program provider beforehand.

15 74. An encapsulated document producing and editing apparatus comprising:

decryption key information provided beforehand;

an operating program file that is decrypted from the decryption key information; and

20 encapsulated document producing and editing means having user interface means for producing and editing a document information file in accordance with a user operation and encapsulating means for encapsulating the produced document information file, said decryption

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key information and said operating program file into a single file.

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75. An encapsulated document producing and editing apparatus comprising:

an operating program file provided beforehand;  
10 encapsulated document producing and editing means having user interface means for producing and editing a document information file in accordance with a user operation and encapsulating means for encapsulating the produced document information file and said  
15 operating program file into a single file; and decryption means for decrypting the encapsulated single file.

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76. An encapsulated document producing and editing apparatus comprising:

encapsulated document producing and editing  
25 means having user interface means for producing and

editing a document information file in accordance with a user operation;

an operating program file provided beforehand; and

5 decryption means for decrypting the produced document information file and said operating program file,

wherein said encapsulated document producing and editing means has encapsulating means for  
10 encapsulating the encrypted document information file and said operating program file into a single file.

15

77. A start program for starting an operating program file provided in an encapsulated document comprising: decryption key information for decrypting encrypted digital information; the operating program  
20 file that is decrypted in accordance with the decryption key information; document information file that is materialized on a computer by the decrypted operating program; and encapsulating means for encapsulating said decryption key information, said operating program file  
25 and said document information file into a single file,

said start program comprising:

reading means for reading the encrypted  
decryption key information and said operating program  
file from said encapsulated document file;

5           decryption means for decrypting said  
decryption key information using a public key provided  
by a third party authentication authority, and  
decrypting said operating program using the decrypted  
decryption key information; and

10           operating program starting means for starting  
said decrypted operating program.

15

78. The start program as claimed in claim 77,  
further comprising public key information provided by  
said third party authentication authority.

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79. The start program as claimed in claim 77,  
further comprising signature determining means for  
25 determining whether signature information in said



encapsulated document is true or false so as to perform a process for preventing a problem caused by an unfair act that has been applied on said encapsulated document file.

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80. The start program as claimed in claim 77,  
10 further comprising means for displaying the signature information of said operating program or said encapsulated document to be started on a display of a computer so as to request a user to check a start of said operating program.

15

81. The start program as claimed in claim 80,  
20 further comprising signature information retaining means for retaining signature information so as to compare the signature information retained by said signature information retaining means with signature information provided in said encapsulated document so that a display  
25 of signature is omitted when the signature information

retained by said signature information retaining means matches the signature information provided in said encapsulated document.

5

82. An encapsulated document producing apparatus comprising:

10 document information file acquisition means for acquiring a document information file storing contents information that is a substance of expression regarding a document;

operating program file acquisition means for  
15 acquiring an operation program file storing an operating program, which is interpreted and executed by a computer, for materializing said document information file acquired by said document information file acquisition means;

20 feature amount computing means for computing a feature amount of said operating program file;

feature amount retaining file producing means for encrypting the feature amount of said operating program file computed by said feature amount computing  
25 means, and saving the encrypted feature amount in a

feature amount retaining file; and

encapsulating means for encapsulating said  
document information file, said operating program file  
and said feature amount retaining file into a single  
5 document.

10 83. The encapsulated document producing  
apparatus as claimed in claim 82, further comprising  
document information feature amount computing means for  
computing a feature amount of said document information  
file so as to encrypt the computed feature amount of  
15 said document information file with encryption key  
information and save the encrypted feature amount in  
said feature amount retaining file.

20

84. A program tamper verification method  
performed by an information processing unit for  
verifying a tamper on an operating program file that  
25 materializes a document information file that is a

substance of expression regarding a document, the  
operating program file and the document information file  
are encapsulated into an encapsulated document file, the  
program tamper verification method comprising the steps  
5 of:

computing a feature amount of said operating  
program file in said encapsulated document file when  
materializing said document information file;

decrypting an encrypted feature amount of said  
10 operating program file that was been retained;

comparing the decrypted feature amount of said  
operating program file with the computed feature amount  
of said operating program file;

limiting materialization of said document  
15 information file performed by said operating program  
file when the decrypted feature amount of said operating  
program file does not match the computed feature amount  
of said operating program file.

20

85. A program tamper verification method  
performed by an information processing unit for  
25 verifying a tamper on an operating program file that

materializes a document information file that is a substance of expression regarding a document, the operating program file and the document information file are encapsulated into an encapsulated document file, the  
5 program tamper verification method comprising the steps of:

computing a feature amount of said operating program file stored at a location indicated by location information retained in said encapsulated document file  
10 when materializing said document information file;

decrypting a decrypted feature amount of said operating program previously retained;

comparing the decrypted feature amount of said operating program file with the computed feature amount  
15 of said operating program file;

limiting materialization of said document information file performed by said operating program file when the decrypted feature amount of said operating program file does not match the computed feature amount  
20 of said operating program file.

comprising:

reading means for reading an encapsulated document file having an encapsulated document structure; and

5                   tamper verification means for performing verification of a tamper on an operating program stored in said encapsulated document file based on a feature amount of said operating program file that materializes a document information file stored in said encapsulated document file and read by said reading means,

                  wherein said encapsulated document structure comprises the document information file, the operating program file and a feature amount retaining file that retains an encrypted feature amount of said operating  
15   program.

20                   87. The tamper verification apparatus as claimed in claim 86, wherein said tamper verification means includes:

                  decryption means for decrypting the encrypted feature amount of said operating program file retained  
25   by said feature amount retaining file stored in said

encapsulated document file and read by said reading means;

feature amount computation means for computing a feature amount of said operation program file stored  
5 in said encapsulated document file; and

tamper verification execution means for performing the verification of a tamper on said operating program file based on the computed feature amount of said operating program file computed by said  
10 feature amount computation means and the decrypted feature amount of said operating program file decrypted by said decryption means.

15

88. The tamper verification apparatus as claimed in claim 86, wherein said tamper verification means includes:

20 feature amount computation means for computing a feature amount of said operating program file stored in said encapsulated document file read by said reading means; and

tamper verification execution means for  
25 performing the verification of a tamper on said

operating program file based on the computed feature amount of said operating program file computed by said feature amount computation means and a feature amount of said operating program file stored in a start program.

5

89. The tamper verification apparatus as claimed in claim 86, wherein said tamper verification means includes:

feature amount computation means for computing a feature amount of said operating program file stored in said encapsulated document file read by said reading means;

encryption means for encrypting the computed feature amount of said operating program file computed by said feature amount computation means; and

tamper verification execution means for performing the verification of a tamper on said operating program file based on the encrypted feature amount of said operating program file encrypted by said encryption means and a decrypted feature amount of said operating program file retained in a feature amount retaining file stored in said encapsulated document file.

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5                   90. The tamper verification apparatus as  
claimed in claim 86, wherein said tamper verification  
means includes:

feature amount computation means for computing  
a feature amount of a feature amount verification  
10 program file stored in said encapsulated document file  
and read by said reading means;

determining means for determining whether or  
not to execute said feature amount verification program  
file based on the computed feature amount of said  
15 feature amount verification program file computed by  
said feature amount computation means and a feature  
amount of said feature amount verification program file  
stored in a start program; and

tamper verification execution means for  
20 performing verification of a tamper on said operating  
program file when said feature amount verification  
program file is determined by said determining means to  
be executed.

91. Am encapsulated document producing  
process program causing a computer to perform the  
5 functions of:

acquiring a document information file  
installed in said computer, the document information  
file containing contents information that is a substance  
of expression regarding a document;

10 acquiring an operating program file that is  
interpreted and executed by said computer so as to  
materialize said document information file acquired by  
said function of acquiring the document information  
file;

15 computing a feature amount of said operating  
program file;

encrypting the feature amount of said  
operating program file computed by said function of  
computing the feature amount by using decryption key  
20 information;

saving the decrypted feature amount of said  
operating program file in a feature amount retaining  
file; and

encapsulating said document information file,  
25 said operating program file and said feature amount

retaining file into a single document file.

5

92. The encapsulated document producing process program as claimed in claim 91, further comprising the functions of:

causing said computer to perform a function of  
10 computing the feature amount of said document information file;

decrypting the computed feature amount of said document information file by using decryption key information; and

15 saving the decrypted feature amount of said document information file in said feature amount retaining file.

20

93. A processor readable storage medium storing an encapsulated document producing process program causing a computer to perform the functions of:

25 acquiring a document information file

installed in said computer, the document information file containing contents information that is a substance of expression regarding a document;

5        acquiring an operating program file that is interpreted and executed by said computer so as to materialize said document information file acquired by said function of acquiring the document information file;

10        computing a feature amount of said operating program file;

      encrypting the feature amount of said operating program file computed by said function of computing the feature amount by using decryption key information;

15        saving the decrypted feature amount of said operating program file in a feature amount retaining file; and

      encapsulating said document information file, said operating program file and said feature amount  
20        retaining file into a single document file.

25        94. The processor readable storage medium as

claimed in claim 93, wherein said encapsulated document producing process program further comprising the functions of:

causing said computer to perform a function of  
5 computing the feature amount of said document information file;

decrypting the computed feature amount of said document information file by using decryption key information; and

10 saving the decrypted feature amount of said document information file in said feature amount retaining file.

15

95. A start program causing a computer to perform the functions of:

reading an encapsulated document file having  
20 an encapsulated document structure; and

performing verification of a tamper on an operating program stored in said encapsulated document file based on a feature amount of said operating program file that materializes a document information file  
25 stored in said encapsulated document file and read by

said reading means,

wherein said encapsulated document structure comprises the document information file, the operating program file and a feature amount retaining file that  
5 retains an encrypted feature amount of said operating program.

10

96. The start program as claimed in claim 95, wherein said function of performing the verification includes the function of:

decrypting the encrypted feature amount of  
15 said operating program file retained by said feature amount retaining file stored in said encapsulated document file and read by said function of reading;

computing a feature amount of said operation program file stored in said encapsulated document file;  
20 and

performing the verification of a tamper on said operating program file based on the computed feature amount of said operating program file computed by said feature amount computation means and the  
25 decrypted feature amount of said operating program file

decrypted by said decryption means.

5

97. The start program as claimed in claim 95, wherein said function of performing verification includes the function of:

10       computing a feature amount of said operating program file stored in said encapsulated document file read by said function of reading; and

15       performing the verification of a tamper on said operating program file based on the computed feature amount of said operating program file computed by said function of computing the feature amount and a feature amount of said operating program file stored in said start program.

20

98. The start program as claimed in claim 95, wherein said function of performing verification includes the function of:

25       computing a feature amount of said operating

program file stored in said encapsulated document file  
read by said function of reading;

encrypting the computed feature amount of said  
operating program file computed by said function of  
5 computing the feature amount; and

performing the verification of a tamper on  
said operating program file based on the encrypted  
feature amount of said operating program file encrypted  
by said function of encrypting and a decrypted feature  
10 amount of said operating program file retained in a  
feature amount retaining file stored in said  
encapsulated document file.

15

99. The start program as claimed in claim 95,  
wherein said function of performing verification  
includes the function of:

20 computing a feature amount of a feature amount  
verification program file stored in said encapsulated  
document file and read by said function of reading;

determining whether or not to execute said  
feature amount verification program file based on the  
25 computed feature amount of said feature amount



verification program file computed by said function of computing the feature amount and a feature amount of said feature amount verification program file stored in said start program; and

5 performing verification of a tamper on said operating program file when said feature amount verification program file is determined by said determining means to be executed.

10

100. A processor readable storage medium storing a start program causing a computer to perform  
15 the functions of:

reading an encapsulated document file having an encapsulated document structure; and

performing verification of a tamper on an operating program stored in said encapsulated document  
20 file based on a feature amount of said operating program file that materializes a document information file stored in said encapsulated document file and read by said reading means,

wherein said encapsulated document structure  
25 comprises the document information file, the operating

program file and a feature amount retaining file that retains an encrypted feature amount of said operating program.

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101. The processor readable storage medium as claimed in claim 100, wherein said function of  
10 performing the verification includes the function of:  
decrypted the encrypted feature amount of  
said operating program file retained by said feature  
amount retaining file stored in said encapsulated  
document file and read by said function of reading;  
15 computing a feature amount of said operation  
program file stored in said encapsulated document file;  
and  
performing the verification of a tamper on  
said operating program file based on the computed  
20 feature amount of said operating program file computed  
by said feature amount computation means and the  
decrypted feature amount of said operating program file  
decrypted by said decryption means.

25

102. The processor readable storage medium as  
claimed in claim 100, wherein said function of  
5 performing the verification includes the function of:  
    computing a feature amount of said operating  
program file stored in said encapsulated document file  
read by said function of reading; and  
    performing the verification of a tamper on  
10 said operating program file based on the computed  
feature amount of said operating program file computed  
by said function of computing the feature amount and a  
feature amount of said operating program file stored in  
said start program.

15

103. The processor readable storage medium as  
20 claimed in claim 100, wherein said function of  
performing the verification includes the function of:  
    computing a feature amount of said operating  
program file stored in said encapsulated document file  
read by said function of reading;  
25      encrypting the computed feature amount of said

operating program file computed by said function of  
computing the feature amount; and

performing the verification of a tamper on  
said operating program file based on the encrypted  
5 feature amount of said operating program file encrypted  
by said function of encrypting and a decrypted feature  
amount of said operating program file retained in a  
feature amount retaining file stored in said  
encapsulated document file.

10

104. The processor readable storage medium as  
15 claimed in claim 100, wherein said function of  
performing the verification includes the function of:

computing a feature amount of a feature amount  
verification program file stored in said encapsulated  
document file and read by said function of reading;

20 determining whether or not to execute said  
feature amount verification program file based on the  
computed feature amount of said feature amount  
verification program file computed by said function of  
computing the feature amount and a feature amount of  
25 said feature amount verification program file stored in

said start program; and  
performing verification of a tamper on said  
operating program file when said feature amount  
verification program file is determined by said  
5 determining means to be executed.

10 105. An electronic document file comprising:  
a plurality of operating programs and  
operating program use information provided by an  
operating program provider; and  
a contents file and contents use information  
15 produced by said operating program provider or a  
document producer.

20 106. The electronic document file as claimed  
in claim 105, wherein at least one of said operating  
programs is an operation verification program that  
operates other operating programs based on said  
25 operating program use information.

5                   107. The electronic document file as claimed  
in claim 105, wherein at least one of said operating  
programs is a contents verification program that limits  
a use of said contents file based on said contents file  
use information.

10

                  108. The electronic document file as claimed  
15 in claim 105, wherein at least one of said operating  
programs is an operation verification program that  
operates other operating programs based on said  
operating program use information, and at least one of  
said operating programs is a contents verification  
20 program that limits a use of said contents file based on  
said contents file use information.

25

109. The electronic document file as claimed  
in claim 106, wherein said operation verification  
program verifies a tamper on said operating programs and  
said operating program use information.

5

110. The electronic document file as claimed  
10 in claim 106, wherein said operation verification  
program limits an operation of said operating programs.

15

111. The electronic document file as claimed  
in claim 107, wherein said contents verification program  
verifies a tamper on said contents file and said  
contents file use information.

20

112. The electronic document file as claimed  
25 in claim 107, wherein said contents verification program

limits a use of said contents use file.

5

113. The electronic document file as claimed  
in claim 106, wherein, when safety of said operating  
programs is not guaranteed by said operation  
verification program, a user of said electronic document  
10 file is notified of the fact that safety of said  
operating programs is not guaranteed.

15

114. The electronic document file as claimed  
in claim 105, wherein said operating programs, said  
operating program use information, said contents file  
and said contents file use information are encapsulated  
20 into a single file.

25

115. An electronic document file producing



apparatus comprising:

reading means for reading a plurality of  
operating programs and operating program use  
information;

5 contents file producing means for producing a  
contents file and contents file use information; and

information producing means for producing  
information to be stored in an electronic document file,  
wherein said electronic document file

10 comprises:

a plurality of operating programs and  
operating program use information provided by an  
operating program provider; and

a contents file and contents use information  
15 produced by said operating program provider or a  
document producer.

20

116. The electronic document file producing  
apparatus as claimed in claim 115, wherein said contents  
file producing means causes one of said operating  
programs of said electronic document file to be executed.

25

117. The electronic document file producing  
5 apparatus as claimed in claim 115, further comprises  
operating program adding means for adding said plurality  
of operating programs and said operating program use  
information provided by the operating program provider  
to said electronic document file based on said contents  
10 file and said contents file use information produced by  
said contents file producing means.

15

118. The electronic document file producing  
apparatus as claimed in claim 116, further comprises  
operating program adding means for adding said plurality  
of operating programs and said operating program use  
20 information provided by the operating program provider  
to said electronic document file based on said contents  
file and said contents file use information produced by  
said contents file producing means.

25

119. An encapsulated document structure comprising:

5           an operating program read by a provided-side computer connected to a network so as to cause the provided-side computer to perform various functions;  
            use information regarding an encapsulated document provided to said provided-side computer through  
10   said network; and  
            sending location information for sending said use information to a providing-side computer connected to said network,  
            wherein said operating program, said use  
15   information and said sending location information are encapsulated into a single document, and said operating program includes use information transmitting program for transmitting said use information according to said sending location information at a predetermined timing.

20

120. The encapsulated document structure as claimed in claim 119, wherein and said operating program  
25   includes:

a contents information display program for displaying contents information that is a substance of expression on a document;

5 a permission information reception program for receiving permission information regarding permission of display of said contents information from said provided-side computer through said network; and

10 a contents information display program for displaying said contents information in accordance with said permission information.

15 121. The encapsulated document structure as claimed in claim 120, wherein said permission information is encrypted feature amount information of said contents information; said operating program further includes a feature amount determination program  
20 for determining whether or not the encrypted feature amount information is equal to predetermined feature amount; and said contents information display program displays said contents information in accordance with a result of determination of said feature amount  
25 determination program.

5                   122. The encapsulated document structure as  
claimed in claim 121, wherein said feature amount  
determination program determines whether or not the  
encrypted feature amount information of said contents  
information is equal to computed feature amount  
10 information computed from said contents information  
existing in said encapsulated document, and said  
contents information display program displays said  
contents information when the encrypted feature amount  
information of said contents information is determined  
15 by said feature amount determination program equal to  
the computed feature amount information computed from  
said contents information existing in said encapsulated  
document.

20

                  123. An encapsulated document structure  
comprising:  
25                   a storage area where contents information,

which is a substance of expression on a document, is stored;

an operating program read by a provided-side computer connected to a network so as to cause the  
5 provided-side computer to perform various functions; and  
use information regarding an encapsulated document provided to said provided-side computer through said network,

wherein said storage area, said operating  
10 program and said use information are encapsulated into a single document, and said operating program includes an encrypted contents information display program for displaying said contents information stored in said storage area.

15

124. An encapsulated document processing  
20 apparatus, comprising:

request information receiving means for receiving request information from a provided-side computer through a network;

encapsulated document producing means for  
25 producing an encapsulated document having a

predetermined encapsulated document structure in accordance with the request information received by said request information receiving means; and

encapsulated document transmitting means for  
5 sending the encapsulated document produced by said encapsulated document producing means to said provided-side computer through said network,

wherein said predetermined encapsulated document structure comprises:

10 an operating program read by said provided-side computer connected to a network so as to cause said provided-side computer to perform various functions;

use information regarding an encapsulated document provided to said provided-side computer through  
15 said network; and

sending location information for sending said use information to a providing-side computer connected to said network,

wherein said operating program, said use  
20 information and said sending location information are encapsulated into a single document, and said operating program includes use information transmitting program for transmitting said use information according to said sending location information at a predetermined timing.

125. The encapsulated document processing  
5 apparatus as claimed in claim 124, further comprising:  
charge information producing means for  
producing charge information of use fee of said  
encapsulated document by computing the use fee in  
accordance with said request information received by  
10 said request information receiving means;  
charge information transmitting means for  
transmitting the charge information of the use fee  
produced by said charge information producing means to  
said provided-side computer through said network; and  
15 payment information receiving means for  
receiving payment information on the use fee from said  
provided-side computer through said network,  
wherein said encapsulated document  
transmitting means sends said encapsulated document  
20 produced by said encapsulated document producing means  
to said provided-side computer through network when the  
payment information on the use fee is received by said  
payment information receiving means.



126. The encapsulated document processing apparatus as claimed in claim 124, wherein said  
5 encapsulated document producing means includes:  
operating program producing means for producing an operating program in accordance with said request information received by said request information receiving means, the operating program being read by  
10 said provided-side computer and causing provided-side computer to perform various functions;  
use information setting means for setting use information regarding said encapsulated document provided to said provided-side computer through said  
15 network; and  
encapsulating means for encapsulating said operating program produced by said operating program producing means and said use information set by said use information setting means into a single document.

20

127. The encapsulated document processing  
25 apparatus as claimed in claim 124, wherein said

encapsulated document producing means includes:

operating program producing means for  
producing an operating program in accordance with said  
request information received by said request information  
5 receiving means, the operating program being read by  
said provided-side computer and causing provided-side  
computer to perform various functions;

encryption key producing means for producing  
an encryption key owned by the providing-side;  
10 operating program encryption means for encrypting said  
operating program with the encryption key produced by  
said encryption key producing means;

use information setting means for setting use  
information regarding said encapsulated document  
15 provided to said provided-side computer through said  
network; and

encapsulating means for encapsulating said  
operating program encrypted by said operating program  
encrypting means and said use information set by said  
20 use information setting means into a single file.

25 128. An encapsulated document processing

apparatus, comprising:

use information receiving means for receiving use information from a provided-side computer through a network;

5 charge information producing means for producing charge information of use fee of said encapsulated document by computing the use fee in accordance with said request information received by said use information receiving means;

10 charge information transmitting means for transmitting the charge information of the use fee produced by said charge information producing means to said provided-side computer through said network;

payment information receiving means for  
15 receiving payment information on the use fee from said provided-side computer through said network; and

permission information transmitting means for transmitting permission information to said provided-side computer through said network when the charge  
20 information on the use fee is received by said payment information receiving means, the permission information for permitting and execution of a saving process of contents information that is a substance of expression on a document.

25

129. An encapsulated document structure,  
5 comprising:  
contents information that is a substance of  
expression on a document;  
an operating program read by an accessing-side  
computer connected to a network, the operating program  
10 causing the accessing-side computer to perform various  
functions; and  
sending location information for sending  
various kinds of information to a providing-side  
computer connected to said through said network,  
15 wherein said contents information, said  
operating program and said sending location information  
are encapsulated into a single document, and  
wherein said operating program includes:  
an operation processing program of which  
20 operation process on said contents information is  
limited based on authority information; and  
a limitation cancellation program for  
canceling a limitation in the operation process of said  
operation processing program by sending various kinds of  
25 information based on said sending location information.

5           130. The encapsulated document structure as  
claimed in claim 129, wherein said contents information  
is encrypted, and said limitation cancellation program  
acquires decryption key information for decrypting the  
10 encrypted contents document based on said sending  
location information through said network so as to  
decrypt the encrypted contents information based on the  
decryption key information acquired.

15

          131. The encapsulated document structure as  
claimed in claim 130, wherein decryption key producing  
information request information is encapsulated into  
20 said single document together with said contents  
information, said operating program and said sending  
location information, the decryption key producing  
information request information for requesting said  
providing-side computer to send decryption key producing  
25 information necessary for producing said decryption key

information, and

said limitation cancellation program includes:

a decryption key producing information  
requesting program for requesting said decryption key  
5 producing information by sending said decryption key  
producing information request information to said  
providing-side computer through said network based on  
said sending location information;

decryption key producing information reception  
10 program for receiving said decryption key producing  
information from said providing-side computer through  
said network;

a decryption key producing program for  
producing said decryption key information based on said  
15 decryption key producing information received by said  
decryption key producing information reception program;  
and

a decryption program for decrypting the  
encrypted contents information based on said decryption  
20 key information produced by said decryption key  
producing program.

132. An encapsulated document processing apparatus, comprising:

storage area acquisition means for acquiring a storage area where contents information, which is a substance of expression on a document, is saved;

request information receiving means for receiving request information through from a provided-side computer through a network;

operating program producing means for producing and operating program in accordance with said request information received by said request information receiving means, the operating program being read by said an accessing-side computer and causing said accessing-side computer to perform various kinds of functions;

sending location information setting means for setting sending location information for sending various kinds of information to a providing-side computer through said network;

encapsulation means for encapsulating said storage area, said operating program produced by said operating program producing program and said sending location information set by said sending location information setting means into a single document; and

encapsulated document transmitting means for

transmitting the encapsulated document produced by said encapsulating means to said provided-side computer through said network,

wherein said operating program producing means  
5 includes:

an operation processing program of which operation process on said contents information is limited based on authority information; and

a limitation cancellation program for  
10 canceling the limitation in the operation process of said operating program by sending various kinds of information based on said sending location information.

15

133. The encapsulated document processing apparatus as claimed in claim 132, further comprising contents information encryption means for encrypting  
20 said contents information, which is stored in said storage area acquired by said storage area acquisition means, according to encryption key information as said authority information, wherein said encapsulated document transmitting means transmits said encapsulated  
25 document, which has said contents information encrypted



by said contents information encryption means and stored in said storage area, to said provided-side computer or said accessing-side computer through said network.

5

134. The encapsulated document processing apparatus as claimed in claim 133, wherein said  
10 limitation cancellation program includes:

a decryption key producing information request program for requesting decryption key producing information necessary for producing decryption key information for decrypting said contents information, a  
15 request being sent to said providing-side computer through said network based on said sending location information;

a decryption key producing information reception program for receiving said decryption key  
20 producing information from said providing-side computer through said network;

a decryption key producing program for producing said decryption key information based on said decryption key producing information received by said  
25 decryption key producing information reception program;

and

decryption program for decrypting said  
encrypted contents information based on said decryption  
key information produced by said decryption key  
5 producing program.

10 135. An encapsulated document processing  
apparatus, comprising:

decryption key request information receiving  
means for receiving decryption key request information  
from an accessing-side computer through a network, the  
15 decryption key request for requesting decryption key  
information for decrypting encrypted contents  
information, which is a substance of expression on a  
document;

decryption key producing means for producing  
20 said decryption key information based on said decryption  
key request information received by said decryption key  
request information receiving means; and

decryption key information transmitting means  
for transmitting said decryption key information, which  
25 is produced by said decryption key producing means, to

said accessing-side computer through said network.

5

136. The encapsulated document processing apparatus as claimed in claim 135, further comprising fee-charging means for charging a use fee of said contents information to said accessing-side computer  
10 when said decryption key information is transmitted by said decryption key information transmitting means.

15

137. An encapsulated document processing apparatus, comprising;

decryption key production request information receiving means for receiving decryption key production  
20 information request information from a providing-side computer through a network, the decryption key production information request information for requesting decryption key producing information necessary for producing decryption key information for  
25 decrypting encrypted contents information, which is a

substance of expression regarding a document;

decryption key producing information producing  
means for producing said decryption key producing  
information based on said decryption key producing  
5 information request information received by said  
decryption key production request information receiving  
means;

decryption key producing information  
transmitting means for transmitting said decryption key  
10 producing information, which is produced by said  
decryption key producing information producing on means,  
to an accessing-side computer through said network; and

fee-charging means for charging a use fee of  
said contents information to said accessing-side  
15 computer when said decryption key producing information  
is transmitted by said decryption key producing  
information transmitting means.